



Healthy Planet

NASA's Earth Science & Publication Health Program *A Candidate 2003 NASA Academy Group Project*



STUDY OF CHANGES TO THE WATER CYCLE

- **BACKGROUND:** Current changes to global environment (i.e., global warming, increase in population & agriculture, ecosystems, etc.) are causing profound changes to the water cycle. Critical issues include: Is the water cycle accelerating; study of extreme events of precipitation, drought, etc.; local to global effects; water quality changes; human impacts and needs; etc.?
- **GOAL:** Study Water Cycle through characterizing, understanding & predicting variations involving complex atmospheric, biogeochemical, and human activities.
- **ACTION AREAS:** 1) Water & Climate; 2) Water & Environment; 3) Water Quality & Human Health; 4) Water & Food; and 5) Water & Conflict.
- **METHODS:**
 - Use remotely sensed data (e.g., MODIS, Landsat, AMSR, etc.) with modeling data (e.g., <http://ldas.gsfc.nasa.gov>) to study changes to water cycle (soil moisture & ground water, evapotranspiration, precipitation, runoff and quality).
 - Work within context of “Decision Support Systems” and use NASA and other technology to address critical water issues confronting our planet (see <http://www.earth.nasa.gov/eseapps>).
 - Team with NASA, national (e.g., USGS, USDA, EPA) and international scientists (H.E.L.P., World Water Council, WMO, etc.) and public health officials to study environmental and societal changes as affected by changes to the water cycle.

